

AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A control system for a craft having two wing control surfaces spaced apart along a main body section of the craft, the system comprising automated synchronized operation of the two wing control surfaces for continuous variable displacement in flight for manoeuvre of the main body relative to the flight path velocity vector with control to a predetermined angle of attack and attitude relationship.
2. (Currently Amended) A control system according to Claim 1, comprising automated synchronized operation of the two wing control surfaces for continuous variable displacement in flight for manoeuvre of the main body relative to the flight path velocity vector with control to a predetermined angle of attack and attitude relationship to maintain continuously at zero value under sustained manoeuvre through to target intercept at zero grazing incidence.
3. (Currently Amended) A control system for a craft according to Claim 1 or 2 comprising means for automated synchronized operation of the two wing control surfaces to maintain continuous variable displacement of each wing control surface via independent actuation under the action of a control routine.
4. (Currently Amended) A control system for a craft according to ~~any preceding claim~~ Claim 1 comprising means for independent actuation of both wings under a control routine involving a soft actuation mechanism.

5. (Currently Amended) A control system for a craft according to ~~any preceding claim~~ Claim 1 comprising means for a demand manoeuvre to act along an axis normal to a Zero Lift Line and in the plane of manoeuvre.

6. (Currently Amended) A control system for a craft according to claim 5~~1~~ wherein the Zero Lift Line is ~~that~~comprises a line co-incident with the local wind axis velocity vector, acting in the plane of manoeuvre in which the two wing control surfaces are deflected and about which there is no net normal force and moment.

7. (Currently Amended) A control system for a craft according to ~~any of Claims~~ Claim 1 to 6 comprising means to manoeuvre comprising additional automated synchronized control deflection of both wings acting normal to the Zero Lift Line in the plane of manoeuvre under the action of a control routine.

8-10. (Cancelled)

11. (Currently Amended) A control system for a craft according to ~~any of Claims~~ Claim 1 to 10 wherein the craft is an aircraft, marine craft or UAV and wherein the control routine is operable to continually control both wings control surfaces to manoeuvre the craft to maintain optimal forward directional visibility.

12. (Cancelled)

13. (Currently Amended) A control system for a craft according to ~~any of Claims~~ Claim 1 to 9 where the craft is a guided missile or torpedo in which the control

routine is operable to drive the ~~manoeuvring main~~ body axis under manoeuvre to coincide with the flight path velocity vector to achieve zero angle of incidence (zero grazing incidence) at target impact for maximum warhead effectiveness.

14-18. (Cancelled)

19. (Currently Amended) A control system for a craft according to ~~any preceding~~ ~~claim~~Claim 1 wherein substantially all of a control surface is moveable under the automated synchronised operation.

20-21. (Cancelled)

22. (Currently Amended) A control system for a craft according to ~~any of~~ ~~Claims~~Claim 1 to 11 and 14 to 20 wherein the craft comprises a marine craft.

23. (Currently Amended) A control system for a craft according to ~~any of~~ ~~Claims~~Claim 1 to 9 and 12 to 20 wherein the craft comprises a missile.

24. (Currently Amended) A control system for a craft according to ~~any of~~ ~~Claims~~Claim 1 to 9 and 12 to 20 wherein the craft comprises a torpedo.

25. (Currently Amended) A control system for a craft according to ~~any preceding~~ ~~claim~~Claim 1 wherein the craft is unmanned.

26-28. (Cancelled)

29. (Currently Amended) A control system for a craft according to ~~any preceding claim~~Claim 1 comprising means to adjust, at an instant in time, the control surfaces setting to effect configuration of the Zero Lift Line and initiate manoeuvre relative to the Zero Lift Line in any plane of manoeuvre.

30. (Currently Amended) A control system for a craft according to ~~any preceding claim~~Claim 1 having a controller to provide, selectively as required:-

constant speed;

variable speed;

proportional rotation and/or translation movement of control surfaces under independent actuation;

geared rotational and/or translational movement of control surfaces under independent actuation;

variable rotational and/or translational movement of control surfaces under independent actuation.

31. (Currently Amended) A craft having a control system according to ~~any one or more of Claims~~Claim 1 to 30.

32. (Currently Amended) A method of controlling a craft having two wing control surfaces spaced apart along a main body section of the craft, the method comprising automated synchronized operation of the two wing control surfaces for continuous variable displacement in flight for manoeuvre of the main body relative to the flight path velocity vector with control to a predetermined angle of attack and attitude relationship.

33. (Currently Amended) A ~~control system~~method of controlling a craft according to Claim +18, comprising automated synchronized operation of the two wing control surfaces for continuous variable displacement in flight for manoeuvre of the main body relative to the flight path velocity vector with control to a predetermined angle of attack ~~and attitude relationship to maintain continuously at zero value under sustained manoeuvre through to target intercept at zero grazing incidence.~~

34. (Currently Amended) A method of controlling a craft according to Claim 1832 or 33 comprising automated synchronized operation of the two wing control surfaces to maintain continuous variable displacement of each wing via independent actuation under the action of a control routine.

35. (Currently Amended) A method of controlling a craft according to ~~any of Claims 32 to 34~~Claim 18 comprising independent actuation of both wings under a control routine and involving operation of a soft actuation mechanism.

36. (Currently Amended) A method of controlling a craft according to ~~any of Claims 32 to 35~~Claim 18 comprising a demand manoeuvre acting along an axis normal to a Zero Lift Line and in the place of manoeuvre ~~is implemented~~.

37. (Currently Amended) A method of controlling a craft according to Claim 3618 wherein the Zero Lift Line is that comprises a line co-incident with the local wind axis velocity vector, acting in the plane of manoeuvre in which the two wings are deflected and about which there is no net normal force and moment.

38. (Currently Amended) A method of controlling a craft according to ~~any of Claims 32 to 36~~ Claim 18 comprising additional automated synchronized control deflection of both wings acting normal to the Zero Lift Line in the plane of manoeuvre under the action of a control algorithm routine.

39-41. (Cancelled)

42. (Currently Amended) A method of controlling a craft according to ~~any of Claims 32 to 40~~ Claim 18 wherein the craft is an aircraft, marine craft or UAV and the method comprising continually controlling both wing control surfaces to manoeuvre the craft for optimal forward directional visibility.

43. (Cancelled)

44. (Currently Amended) A method of controlling a craft according to ~~any of Claims 32 to 40~~ Claim 18 wherein the craft is a guided missile or torpedo and the method comprising driving the ~~manoeuvring main body axis~~ under manoeuvre to coincide with the flight path velocity vector for zero angle of incidence (zero grazing incidence) at target impact for maximum warhead effectiveness.

45-49. (Cancelled)

50. (Currently Amended) A method of controlling according to ~~any of Claims 32 to 49~~^{Claim 18} comprising moving substantially all of a control surface moveable under the automated synchronised operation.

51-52. (Cancelled)

53. (Currently Amended) A method of controlling a craft according to ~~any of Claims 32 to 42 and 45 to 51~~^{Claim 18} wherein the craft comprises a marine craft.

54. (Currently Amended) A method of controlling a craft according to ~~any of Claims 32 to 40 and 43 to 51 or 52~~^{Claim 18} wherein the craft comprises a missile.

55. (Currently Amended) A method of controlling a craft according to ~~any of Claims 32 to 40 and 43 to 51 or 53~~^{Claim 18} wherein the craft comprises a torpedo.

56. (Currently Amended) A method of controlling a craft according to ~~any of Claims 32 to 55~~^{Claim 18} wherein the craft is unmanned.

57-59. (Cancelled)

60. (Currently Amended) A method of controlling a craft according to ~~any of Claims 32 to 59~~^{Claim 18} comprising adjusting, at an instant in time, the control surfaces setting to effect configuration of the Zero Lift Line and initiate manoeuvre relative to the Zero Lift Line in any plane of manoeuvre.

61. (Currently Amended) A method of controlling a craft according to ~~any of claims 32 to 60~~Claim 18 comprising operating a controller to provide, selectively as required:-

constant speed;

variable speed;

proportional rotation and/or translation movement of control surfaces under independent actuation;

geared rotational and/or translational movement of control surfaces under independent actuation;

variable rotational and/or translational movement of control surfaces under independent actuation.

62. (Cancelled)

63. (Currently Amended) A computer program product directly loadable into the internal memory of a digital computer, comprising software code portions for performing the method of ~~any one or more of claims 32 to 61~~Claim 18 when said product is run on a computer.

64. (Currently Amended) A computer program directly loadable into the internal memory of a digital computer, comprising software code portions for performing the method of ~~any one or more of claims 32 to 61~~Claim 18 when said program is run on a computer.

65. (Currently Amended) A carrier, which may comprise electronic signals, for a computer program of Claim 6235.

66. (Currently Amended) Electronic distribution of a computer program product of
Claim 63 or a computer program of claim 64 or a carrier of claim 65.